NAIC
National Association of Insurance Commissioners

JOURNAL OF INSURANCE REGULATION

Cassandra Cole and Kathleen McCullough
Co-Editors

Vol. 40, No. 7

Gender X and Auto Insurance: Is Gender Rating Unfairly Discriminatory?

Lorilee A. Medders, Ph.D.
Jamie A. Parson, J.D.
Matthew Thomas-Reid, Ph.D.

JIR-ZA-40-07

National Association of Insurance Commissioners

The NAIC is the authoritative source for insurance industry information. Our expert solutions support the efforts of regulators, insurers and researchers by providing detailed and comprehensive insurance information. The NAIC offers a wide range of publications in the following categories:

Accounting & Reporting
Information about statutory accounting principles and the procedures necessary for filing financial annual statements and conducting risk-based capital calculations.

Consumer Information
Important answers to common questions about auto, home, health and life insurance — as well as buyer's guides on annuities, long-term care insurance and Medicare supplement plans.

Financial Regulation
Useful handbooks, compliance guides and reports on financial analysis, company licensing, state audit requirements and receiverships.

Legal
Comprehensive collection of NAIC model laws, regulations and guidelines; state laws on insurance topics; and other regulatory guidance on antifraud and consumer privacy.

Market Regulation
Regulatory and industry guidance on market-related issues, including antifraud, product fi ling requirements, producer licensing and market analysis.

NAIC Activities
NAIC member directories, in-depth reporting of state regulatory activities and official historical records of NAIC national meetings and other activities.

Special Studies
Studies, reports, handbooks and regulatory research conducted by NAIC members on a variety of insurance related topics.

Statistical Reports
Valuable and in-demand insurance industry-wide statistical data for various lines of business, including auto, home, health and life insurance.

Supplementary Products
Guidance manuals, handbooks, surveys and research on a wide variety of issues.

Capital Markets & Investment Analysis
Information regarding portfolio values and procedures for complying with NAIC reporting requirements.

White Papers
Relevant studies, guidance and NAIC policy positions on a variety of insurance topics.

For more information about NAIC publications, visit us at:

http://www.naic.org/prod_serv_home.htm

Printed in the United States of America

NAIC Executive Office
444 North Capitol Street, NW
Suite 700
Washington, DC 20001
202.471.3990

NAIC Central Office
1100 Walnut Street
Suite 1500
Kansas City, MO 64106
816.842.3600

NAIC Capital Markets
& Investment Analysis Office
One New York Plaza, Suite 4210
New York, NY 10004
212.398.9000

Editorial Staff of the *Journal of Insurance Regulation*

Editorial Review Board

Purpose

The *Journal of Insurance Regulation* is sponsored by the National Association of Insurance Commissioners. The objectives of the NAIC in sponsoring the *Journal of Insurance Regulation* are:

1. To provide a forum for opinion and discussion on major insurance regulatory issues;
2. To provide wide distribution of rigorous, high-quality research regarding insurance regulatory issues;
3. To make state insurance departments more aware of insurance regulatory research efforts;
4. To increase the rigor, quality and quantity of the research efforts on insurance regulatory issues; and
5. To be an important force for the overall improvement of insurance regulation.

To meet these objectives, the NAIC will provide an open forum for the discussion of a broad spectrum of ideas. However, the ideas expressed in the *Journal* are not endorsed by the NAIC, the *Journal's* editorial staff, or the *Journal's* board.

Gender X and Auto Insurance: Is Gender Rating Unfairly Discriminatory?

Lorilee Medders, Ph.D. | Jamie Parson, J.D. | Matthew Thomas-Reid, Ph.D.

IMPORTANCE Concerns regarding how and whether gender should be used in underwriting and rating auto insurance take on increased importance in light of the recognition of non-binary gender and transgender identities.

OBJECTIVES This study evaluates the use of gender as a rating variable in auto insurance given 1) the potential for unfair discrimination to result; 2) the complexities of non-binary gender identity; 3) the modern capability to more directly measure driving behavior using variables other than gender.

EVIDENCE An insurance carrier charges differential prices for its products based on differentials in risk. In an evolving environment for gender identity, some states have begun to recognize non-binary and transgender (trans*) identities by implementing a Gender X option on driver's licenses. Insurance carriers in most states are left with minimal direction on how to appropriately underwrite and price this emerging class of drivers using gender as a discriminating variable. The question of auto insurance rates being unfairly discriminatory arises. The traditional gender rating factor is binary, and while to date, gender has been useful as a proxy for unobservable differences in driver riskiness, technology has advanced the opportunity to more directly measure actual driving behavior and exposure through other predictors.

FINDINGS When risk transfer to an insurer is priced based on uncontrollable and/or immutable classifications such as race and gender, there can be profoundly different views of what constitutes fairness. Additionally, as diversity and inclusion continue to be components of strategic initiatives within the insurance market, the insurance industry must navigate carefully between the business and regulatory imperatives for fair price discrimination and inclusion efforts. This study considers trans* insureds and the introduction of Gender X as an additional categorical level of the gender identity rating factor, and delves into the economic and social implications of gender-based rating and gender inclusivity. We assert that the future use of gender in setting auto insurance rates may represent a form of unfair discrimination. We provide recommendations to ameliorate the gender rating problem, chief of which is to eliminated the gender rating variable and replace it with rating variables that more directly measure an insured's riskiness (e.g., driving behaviors and exposure).

CONCLUSION & RELEVANCE This paper addresses the potential for unfair discrimination in auto insurance should gender-based rating be continued into the future. It also explores the opportunity to enhance the auto insurance industry's social compact with its insureds. We recommend gender be removed as an underwriting and/or rating factor. We submit that in addition to resolving the question of unfair discrimination, such a change would enhance trust between insurers and trans* community members, and thereby increase the likelihood that trans* insured drivers will 1) be open with insurers in the underwriting process, and 2) purchase non-compulsory coverages, all else the same. Notwithstanding short-term market problems and frictions that may occur, the socioeconomics of introducing Gender X (and ultimately, eliminating gender from pricing altogether) make good business and regulatory sense.

Gender X and Auto Insurance: Is Gender Rating Unfairly Discriminatory?

Lorilee A. Medders, Ph.D.*
Jamie A. Parson, J.D.**
Matthew Thomas-Reid, Ph.D.***

Abstract

Determining what constitutes fairness in insurance price discrimination can be complex and subject to debate. We assert that risk transfer to auto insurers with pricing based on gender, as is the case in most states and for most insurers, is problematic. Gender identity is outside the control of the insured, immutable, and not risk causal. Further, since discriminating based on gender identity may perpetuate negative stereotypes and potentially inhibit socially valuable behavior, such as the purchase of insurance, gender-based rating is undesirable despite its statistical value. We argue for price modernization in auto insurance. Introducing Gender X into gender-based rating is a start. Longer term, the use of risk-specific information—i.e., behavioral and exposure data—for which gender has served as proxy makes economic sense. Moreover, as increasingly autonomous vehicles

* Joseph F. Freeman Distinguished Professor of Insurance, Department of Finance, Banking and Insurance, Walker College of Business Honors Program Director, Walker College of Business, Appalachian State University; *meddersla@appstate.edu*.

** Interim Chief Diversity Officer, Office of the Chancellor, Appalachian State University; *andersonja2@appstate.edu*.

*** Assistant Professor of Educational Foundations, Department of Leadership and Educational Studies, Appalachian State University; *reidma@appstate.edu*.

depersonalize underlying risks associated with transportation, driver-specific attributes necessarily take a backseat to other variables in fair price discrimination.

I. Introduction

There are three goals of insurance rate regulation. Rates must be: 1) adequate; 2) not excessive; and 3) not unfairly discriminatory. Rates that are adequate yet not excessive are overall high enough to pay claims and expenses, yet not so high overall that they result in unreasonable profiteering by insurers. The third regulatory goal—that rates are not unfairly discriminatory—is the topic of interest in our research. The concept of unfair discrimination in an insurance context—determining what constitutes fairness in pricing—can differ substantially from the thinking on fairness in a societal context. As a result, the term "discrimination" may be used quite differently in these two contexts. Discrimination, with negative societal connotations, is endemic in our world broadly and largely unjustifiable, yet in the narrower world of insurance, it is the basis for the entire industry's viability and sustainability. In the insurance context, we can receive the term "discrimination" in a neutral manner, simply taking it to mean different treatment for different groups having different characteristics, without it necessarily connoting any negative intent or outcome. Indeed, the purpose in insurance for engaging in "fair discrimination" —that is, discrimination that price differentiates between discernibly different levels of risk—is itself rooted in economic fairness.

An insurance carrier charges differential prices for its products based on differentials in risk. Nevertheless, when risk transfer to an insurer is priced based on uncontrollable and/or immutable classifications such as race and gender, there can be profoundly different views of what constitutes fairness. In many areas of U.S. law, discrimination on either the basis of gender or sexual identity is prohibited in a number of jurisdictions for a number of consumer situations. Yet the broad concept of societal fairness and the much narrower concept of actuarial fairness differ, and so within insurance markets, U.S. law has historically set insurance apart from other products in speaking to issues of fairness and discrimination (West, 2013). Within the last year, several states have enhanced their recognition of nonbinary or genderqueer identities by implementing a Gender X option on driver's licenses. Insurance carriers are left with minimal direction on how to appropriately price this emerging class within the three goals of rate regulation.

Additionally, as diversity and inclusion continue to be a strategic initiative within the insurance market, the insurance industry and its regulatory environment have to navigate carefully between the business imperatives for adequate pricing and inclusion efforts. This paper addresses the potential for unfair discrimination in some lines of business—with special focus on auto insurance—should gender-based rating be continued into the future. It also explores an immediate opportunity to enhance the insurance industry's social compact with its insureds via recognition of the Gender X identity. Part I gives a primer on nonbinary and trans-identity followed by a brief history of the role of gender in insurance pricing, Part II discusses nonbinary, transgender, and the introduction of Gender X as an additional categorical level of the gender identify rating factor as used in insurance

pricing. Part III and Part IV dive into the economic and social implications of movement in U.S. law toward more gender inclusivity.

II. Sex and Gender: A Primer

It has long been accepted that there is a distinction between sex and gender, where sex "refers to physical attributes and is anatomically and physiologically determined," and gender is seen as "a psychological transformation of the self—the internal conviction that one is either male or female (gender identity) and the behavioral expressions of that conviction" (Fausto-Sterling, 2000, p. 3). This understanding has led to the erroneous conclusion that sex is something that is fixed and clearly determinable, and gender is the socially constructed variable. To clearly understand the complexities facing any institution that uses either sex or gender identity as a determining factor for decision making, it is critical that this distinction be troubled. Before prescribing a series of identity-based definitions, it ought to be made clear that assuming fixed categories of sex is problematic, understanding that "our bodies are too complex to provide clear-cut answers about sexual difference" (Fausto-Sterling, 2000, p. 4).

In a purely material sense, our bodies are made up of characteristics that we have given meaning, and combinations of these characteristics have been labeled "sex characteristics," both primary and secondary. In giving this material inherent meaning, we develop rigid understandings of what it is to be male and female, even as we might recognize the social constructions of masculine and feminine. But the meaning that we give bodily material "comes to us already tainted, containing within it pre-existing ideas about sexual difference" (Fausto-Sterling, 2000, p. 23).

Often forgotten in our understanding of bodily material is that not only have we created *sexed* meaning over time, but there is a history of skewed understandings related to sex, tainted by economic incentives for doctors to pathologize and misdiagnose those whose bodily materiality does not fit clear sexed categories (Irving, 2012, p. 18), as well as "fixing" intersex babies who are born with similarly ambiguity (Fausto-Sterling, 2000, p. 45). It is only with this history in mind that we can come to understand a current moment when the lived experiences of those whose bodies do not conform to our binary understandings of sex and gender.

Beginning this section with an emphasis on sex is intentional, as it is critical to understand that when approaching the topic of gender identity, sex is not a fixed given. That is to say that none of the identities discussed in this paper, be they transgender, nonbinary, or the infrequently used term "transsexual," should be seen as an individual altering their fixed and essential sex, as this is not a stable or reliable categorization. An understanding of the term "intersex" becomes pivotal here, as many individuals are born with primary and secondary sex characteristics prescribed to both male and female identities, even as many of these children are

given "corrective genital surgery at birth even if this does not produce reliable outcomes" (Creighton, 2009, p. 251). For this reason, it is important to realize that many individuals with non-normative gender identities actually have non-normative sex identities, even though "it has been in the interests of the medical establishment to make sure that intersex is perceived by the general public as a highly rare condition, which requires information not available or accessible to the average person" (Creighton, 2009, p. 254).

Intersex identities matter particularly in the context of automobile insurance because one might tend to ask the problematic question of what the applicant's sex assigned at birth is, even if that differs from their gender identity. This comes out of "societal insistence that bodies always and without fail conform to the either/or, male/female paradigm" (Creighton, 2009, p. 252). For this reason, even the sex assigned at birth might not give the insurer useful data in determining rates, because the fuller picture of the applicant's actual material body (physiological make, hormones, etc.) has been placed into a potentially inaccurate binary box. To assume that every applicant that has an M on their birth certificate has the same amount of testosterone and all male sex characteristics and that every applicant with an F has the same amount of estrogen and all female sex characteristics is simply flawed from the start, as it falls with assumptions of compulsorily cisgenderness[1] that mark our default assumptions about people: Assume cis and straight until proven otherwise (Berila, 2016, p. 6, 9).

If identity related to sex is not fixed, then certainly identity related to gender is not fixed. While it might be easy to assume that gender identity is chosen, or random, gender theorist Judith Butler (1988) posits the notion that gender identity is made up of stylized repetitions of acts over time (p. 520). By this it is meant that the style (feminine, masculine, androgyne) of a person's repeated performance over time does more to define gender than a fixed point or performance. Gender identity here can be seen as distinct from gender nonconforming performance such as drag in that it becomes stylized and repeated over time, but even this does not fully explain the experiences of various gender identities, as political, economic, and social factors can contribute to individuals performing their gender identities differently in different contexts. Butler (1993) clarifies this notion of gender performativity by cautioning against thinking of gender as a choice or a role or a construction that one puts on in an arbitrary manor: This is a voluntarist account of gender, which presumes a subject intact prior to its gendering. The sense of gender performativity that I meant to convey is something quite different (Butler, 1993, p. 21).

Understanding that gender does not exist prior to the performance of gender helps in contextualizing the problem: Individuals with non-normative gender identities do not "decide" to be "a different gender" any more than cisgender folks "decide" to be the gender that coincides with their sex assigned at birth. It is this

1. Cisgender is a term that simply means an individual's sex assigned at birth is the same (cis) as their gender identity. This is in contrast to transgender, which means sex assigned at birth has changed (trans) from the individual's gender identity.

troubling of sex assigned at birth that leads to the need for new possibilities in understanding gender and sex in relation to auto insurance evaluation. Moving away from this monoglossic account of gender is critical in contextualizing the argument that a new way of thinking about gender and sex is needed (Francis, 2010, p. 479–480; Jourian, 2015, p. 15). Further, "Viewing the four categories of sex, gender identity, gender expression, and sexual orientation as four interactive, fluid, and nonbinary continuation allows us to discuss gender and sexuality in complex and nuanced ways that provide room for agency and self-determination" (Jourian, 2015, p. 17).

There are myriad terms that are used in relation to gender identity, and while there is no necessity to define all of them here, it is important to understand some basic vocabulary in relation to gender identity. Sex assigned at birth simply relates to what a person is assigned on their birth certificate; gender identity is the identity that a person uses to describe their gender. In the simplest terms, a person whose gender identity aligns with their sex assigned at birth is called cisgender, and a person whose gender identity does not align with their sex assigned at birth is called transgender. The term "transsexual" has a very specific meaning and connotes that the individual has undergone gender confirmation surgery.[2] This term should be avoided unless the individual specifically uses this term to define themselves. Moving forward, the use of the word trans* will serve as a marker that these terms are fluid and that the individuals referred to might use terms as varied as transgender, transsexual, genderqueer, genderfluid, nonbinary, transmasculine (nonbinary with a masculine gender expression), or transfeminine (nonbinary with a masculine gender expression) (Blackburn, 2014, p. 3–4). Each of these terms has specific meaning for individuals, and it is important to remember that the use of umbrella terms is often not sufficient for individuals to fully express their own identities, and their expressions of identity should always be validated and honored (Blackburn, 2014, p. 3–4). Given that "over the last decade, transgender and nonbinary people have gained visibility," trans* and nonbinary individuals and their friends, families, and allies will make up a significant portion of the consumer market, and a more nuanced and informed understanding of these myriad identities is necessary to provide appropriate services (Stroumsa et al., 2020, p. 528). While there is significant disparity between projected numbers of trans* individuals and the ability to gather sufficient data, even the largest number that is typically stated, around 2% of the population, suffers from substantial limitations (Nicolazzo, 2017, p. 22).

A final note in this section needs to address the use of the term "gender" as opposed to "sex." "Sex" implies "sex assigned at birth," and since the arguments in this paper speak specifically to an individual's identity, the term "gender" is used henceforth as a reminder that we are not referring necessarily to the individual's sex assigned at birth. The term "gender" is also congruent with the industry's standard use of this term over "sex."

2. Gender confirmation surgery refers to a range of procedures that aid in making the individual's physical body more accurately reflect the individual's gender identity.

III. Background of Insurance Pricing and Gender Factors

The primary goal of ratemaking in insurance is to develop a rate structure that enables the insurer to compete effectively while earning a reasonable profit (Rejda et al.,, 2020). To accomplish these objectives, the premiums must adequately cover expected levels of losses and expenses, as well as include a reasonable amount for profits and contingencies (the unexpected). Improper insurance prices can result from two distinct ratemaking failures: 1) failure to recover all costs associated with risk transfer in the final premium, or rate inadequacy; and 2) failure to differentiate rates for identifiable classes of risks with demonstrable differences in expected cost of risk, or failure to risk discriminate (Casualty Actuarial Society, 2003).[3]

Rate adequacy means the insurer charges a rate sufficient to at least pay expected claims. Because not all insurance markets are competitive enough to ensure insurance prices remain reasonable, regulators also protect consumers against excessive insurance pricing. Since insurance is priced prior to most of an insurer's costs being realized (or even known), the insurer estimates costs (especially its losses via policy claims) using the best information available. Generally, an individual's demand for insurance is positively correlated with the individual's risk of loss.[4] Because policyholders, even if purchasing the same coverage, do not present the same risk of loss (based on the available information), insurers do not charge all policyholders the same amount. Insurance pricing is predicated on risk classification—grouping insured exposures into homogeneous pools. Thus, the process of pricing (and that of underwriting as well) necessarily differentiates, or discriminates, among insureds.

To meet both the regulatory and business requirements, it is important for rates to appropriately reflect differences in risk exposure for at least three interconnected reasons. First is an issue of fairness. Insurance provides a medium for an uncertainty transfer from the insured to the insurance pool; the insured must have confidence in the pool for the agreement to work. If the insurer charged the same rate to all insureds, then those who present lower risk would pay too much. Not only might this be unfairly discriminatory, but they would, unless mandated to carry this coverage, likely drop out of the pool because they are not receiving appropriate value for their premium. Even if coverage is mandated, as with automobile insurance, insureds would over time migrate to a different insurer who differentiated rates to more closely approximate an insured's risk. This would

3. Rate regulation focuses on three insurance rating characteristics, including rate adequacy and fair discrimination as mentioned here, but also rates not excessive (to ensure prices overall remain reasonable and not prohibitively expensive (Rejda, et al., 2020)).

4. The relationship between risk and insurance demand is well established in the literature. Schlesinger (2000) provides the theoretical underpinnings of insurance demand within various scenarios, as well as a bibliography of the previous literature.

leave the insurer with a group of insureds who present a greater risk than the base (average) rate and the problem of adverse selection. If these high-risk insureds paid only $1 for their policies, but on average cost $1.20 in losses, the insurer would eventually be out of business.

Second is an issue of risk reduction and moral hazard. Even if insureds were not mobile consumers of insurance, and thus could not drop out of the pool or switch insurers, a failure to differentiate between risks would create problems for the insurer. From a moral perspective, risk pooling may shift an individual's sense of responsibility for losses to the collective pool; in this sense, pooling *socializes* responsibility (Baker, 2002). Failure to discriminate between insureds on the basis of risk exacerbates this moral hazard problem. Those insureds who enter the pool as "low" risks, realizing over time that safety has no bearing on insurance costs, have a reduced incentive to engage in loss mitigation. Meanwhile, those insureds who enter the pool as "high" risks have little or no incentive to improve their risk factors. Thus, losses can be expected to rise overall, and prices must rise for all participants (Akerlof, 1970; Rejda et al., 2020).

Third is an issue of balancing rate responsiveness with rate stability (Werner & Modlin, 2016). As with risk differentials among and between insureds, there are risk differentials over time. It is important for insurers to set rates to appropriately reflect changes in risk and exposure over time. Loss trends and shifts in risk factors can necessitate rate changes. Yet changing rates can come at significant costs for insurers, principal of which may be the regulatory costs of filing for approval of the new rates, the internal operational costs of updating algorithms and systems to accommodate accordingly, and the market costs of communicating changes to insurance consumers effectively. Risk and underwriting factors that are statistically significant in explaining risk differentials that are stable over time are thus preferable to insurers. If an observable risk factor historically shows a statistical correlation to losses (such as gender), but serves only as a proxy for underlying factors that are not observable or discernable (e.g., risk aversion, driving habits, reason for driving exposure), then over time as technology improves the observability of the underlying risk factors, the proxy becomes redundant and no longer useful in rating. The more these underlying risk factors can be used in rating, the less need there is to change the rating structure.

To avoid these market problems, the insurer creates rate classes and a rate plan. Failure to have a rate plan that reasonably discriminates among risks can result in a slow death spiral for the insurer. The class plan applies rating factors to adjust the base rate depending on the risk presented by the insured. For most lines of insurance, the rate varies significantly with the risk's characteristics (e.g., where it is, how protected it is, what it is used for, its loss history). In the first stage of individual, or class, ratemaking, the insurer determines which risk criteria (i.e., rating variables) effectively segment risks into groups (classes) with similar expected loss experience. In the second stage, the insured population is subdivided into appropriate levels for each rating variable, and rate makers calculate the indicated rate differential relative to the base level for each level being priced.

Despite the need for insurers to discriminate fairly in the pricing of insurance, some specific rating factors shown to be linked to risk are not allowed. In no state are insurers allowed to use income, race, ethnicity, or religion in personal lines of insurance. The public policy reasons for disallowing certain rating factors are: 1) social adequacy concerns (meaning premiums or benefits provide a minimum standard, or floor, of living to all participants); and 2) protection of certain groups from discrimination (regardless of whether such discrimination is calculated to be statistically fair). Social adequacy and special group protection are at odds with individual equity (and statistically fair discrimination), and thus are positively related to adverse selection (Pauly et al., 2003). From a public policy viewpoint, however, some adverse selection can be advantageous. Adverse selection may lead to a higher proportion of total losses for the whole population being covered by insurance than if there were no adverse selection (Schlesinger, 2000; Pauly et al., 2003).

Empirical evidence of adverse selection is mixed. Generally, life, auto, and health insurance studies generally do not find statistically significant evidence of adverse selection (Cawley & Phillipson, 1999; Chiappori & Salanie, 2000; Carden & Hendel, 2001; Dionne et al., 2001). Yet other studies of health insurance, as well as long-term care insurance (LTCI) and annuities, have shown statistical evidence of adverse selection (Cutler & Zeckhauser, 1998; Finklelstein & Poterba, 2004; Finkelstein & McGarry, 2006). Weak evidence of adverse selection in certain markets suggests that the rating and underwriting processes effectively differentiate among individual risks.[5]

Setting aside for a moment the economics of fair discrimination in insurance, there also exists social considerations in the determination of fairness. Consistent evidence is available, across lines of business and jurisdictions, that insurance consumers believe that some insurance discrimination is fair (Schmeiser et al., 2014). Nevertheless, consumers are also concerned that some discrimination is unfair. This seemingly double view of insurance makes sense when we consider the compulsory nature (or nearly so) of some insurance products. The more of a mandate (whether necessitated by law or by lender) an insurance purchase is, the more we can imagine that consumers view the purchase as less of an economic good and more of a social good, resulting in different attitudes about its fairness.

In the U.S., gender may be included as one factor in underwriting and pricing various lines of insurance.[6] For instance, in the states where allowed, insurer rating

5. Another possible reason is the negative correlation between risk aversion (such as the willingness to purchase insurance) and risk level (estimated beforehand based on hindsight observation of the occurrence rate for other observed claims) in the population. If risk aversion is higher among lower-risk customers, adverse selection can be reduced or even reversed, leading to "advantageous" selection. This occurs when a person is less likely to engage in risk-increasing behavior and more likely to engage in risk-decreasing behavior (Schlesinger, 2000).

6. In 2011, the European Court of Justice concluded that gender may not be used for discrimination of any kind in insurance—pricing, underwriting, or marketing (European Union, 2012). Prior to this ruling, gender was routinely used for pricing insurance. Although the precise reasons for this change in European law remain open for debate, clearly the most obvious

plans may include gender to varying degrees in life, health, disability, auto, employment practices liability, and other product lines. Consider auto and individual life insurance as representative examples of how gender often plays a role in differentiating between insureds.

A. Auto Insurance

Personal auto insurance rates are driven by the statistical correlations insurers have found between claims (the frequency and severity of at-fault accidents) and multiple variables. Although these may vary, they typically include: 1) driving record (traffic violations and/or lack of a driving record); 2) accident history (where the driver being priced was at fault); 3) exposure to driving risk (number of miles driven and the degree to which these are for commute versus "pleasure" driving); 4) location (the state in which the vehicle is stored and whether the ZIP code is considered urban, suburban, or rural); 5) age of driver (the youngest and oldest drivers generally correlate to higher risk); 6) the type of vehicle driven (due to differences in likelihood of theft, cost to repair and safety features/ratings); 7) credit score (linked to probability of filing a claim, as well as cost of claims); 8) insurance policy features (coverage limits, deductibles, and other coverage options); and gender (Werner & Modlin, 2016).

Gender is one variable that has long been used by insurers in most states to derive auto insurance rates. Historically, female drivers have been correlated with lower frequency and severity of auto accidents, especially at younger driving ages (Mannering, 1993; Li et al., 1998; Swedler et al., 2012; Insurance Institute for Highway Safety, 2020). On the surface, while this may appear a straightforward differential, it is not. Gender almost certainly is a proxy for other (more direct) underwriting factors, such as amount and distance of driving, reasons for driving, and driving distractions.

Statistics generally reveal that, all else the same, males are a higher risk for at least five reasons: 1) accidents; 2) speeding; 3) driving under the influence (DUI) convictions; 4) lack of seatbelt use; and 5) driving more expensive vehicles (Mannering, 1993; Lord & Mannering, 2010). Men are statistically more likely to be involved in the first three factors until their 30s or 40s. In fact, the National Highway Traffic Safety Administration (NHTSA) data show that male drivers involved in fatal accidents are more likely to have been speeding than women.[7] Gender clearly is being used, to some extent, to proxy for other (less known or even observable) variables. But gender is used as a pricing factor because it shows as statistically relevant even after accounting for these other variables, at least insomuch as the other variables are observable and known. Thus, if a male and female each apply for auto insurance, with all other factors (such as accident and

motivation for prohibiting gender as a rating factor is to limit negative stereotypes, so that regardless of gender, an individual would receive equal access to insurance products.

7. Data taken directly from the National Highway Traffic Safety Administration website (https://cdan.nhtsa.gov/tsftables/tsfar.htm)

driving record and vehicle details) equal, in states where allowed, most insurers charge the male a higher price due to an insurer's statistical expectation that males will be responsible for more losses.

Although most insurers' rating plans have the factors related to gender set to charge lower rates for women than men, all else the same, this does not mean that all females pay less than all males. Female drivers who have more other negative attributes in the rating plan may pay more than men who have fewer other negative attributes.

The use of gender in auto insurance underwriting and pricing has become controversial. Some of the controversy relates to a narrowing of the loss/claims gap between males and females and thus instability in gender as a rating factor over time. This potential instability in the distinct male-female risk differential may owe both to societal changes over time, as well as within-insured changes over time. Culturally, females and males may have more similar reasons for being on the road than in the past and may have adopted more similar driving behaviors as well (American Automobile Association, 2017). Moreover, the phase of life may also have an impact on the other variables for which gender is used as a proxy.

A debate about gender and auto insurance rates is not new. In 1985, Montana implemented unisex insurance legislation that required insurers to offer the same prices and benefits for auto insurance, regardless of gender.[8] Since that time, gender rights and equality have moved among the forefront of diversity and inclusion issues that auto insurers face. As more states make changes as to how gender is listed, and by making available a gender-neutral option, companies that still use gender as a rating factor likely must respond with revised rating plans.

As of this writing, seven states have either banned the use of gender or require unisex pricing in auto insurance: 1) California; 2) Hawaii; 3) Massachusetts; 4) Michigan; 5) Montana; 6) North Carolina; and 7) Pennsylvania (National Association of Insurance Commissioners, 2020). Other state legislatures are looking to include a third gender option of self-identification.[9] This comes at a time when insurers, lawmakers, and regulators are increasingly considering ways in which to employ tools to focus more on driving behaviors than on proxy criteria in underwriting and pricing. Telematics can allow insurers to tailor the pricing and contract terms of auto insurance policies to customers, based on how many miles and how fast they actually drive, whether they brake hard or accelerate too quickly, and policyholder preferences.

B. Life Insurance and Life Annuities

Life-based insurance products (namely, life insurance and life annuities) are also traditionally rated based on variables that show an actuarial relationship to

8. Mont. Code Ann. § 49-2-309 (1985).

9. In addition to banning gender, other states have moved to ban the use of educational status, marital status, or credit scores (as cited in Prince & Schwarcz, 2020).

losses/claims. The principal rating factors generally are: 1) age (with age, the likelihood of death increases; 2) smoking behavior and history; 3) health history (personal and family); 4) lifestyle (vocation, avocations, financial history, and criminal records); 5) policy features (term versus whole life, coverage length, death benefit, and cash value options); and gender (Black et al., 2015).

Life insurance and life annuity risk (and pricing) mathematics work opposite one another. The lives of individuals with favorable longevity factors cost less to insure than those with less favorable longevity factors since life insurance payouts are later on average for those who live longer. On the other hand, providing a lifetime annuity payment to individuals with favorable longevity factors cost insurers more than those with less favorable longevity factors since annuity payouts last longer on average for those who live longer.

Females tend to live longer than males. In the U.S., the average life expectancy for females is approximately five years longer than for males (Black et al., 2015). This disparity means that when gender is used as a rating variable, females generally pay less for life insurance than males do and more for life annuities than males do, all else the same. Gender is a strong direct predictor of longevity (Lemaire, 2002). This means gender may be more biologically linked to the risk than is the case with auto insurance, and thus the proxy argument for eliminating it as a rating factor is weak at best.

Nevertheless, in some states, the use of unisex mortality tables has become the law, especially in cases of employer-sponsored life insurance and annuities. Montana's 1985 legislation to ban the use of gender in rating, for instance, included employer-based life and annuity pricing.[10]

C. Introduction of Gender X to Insurance

"Gender X" is the term used by some Department of Motor Vehicles (DMV) to describe the third gender classification on state identification in several jurisdictions. The X is put in place of the traditional M or F to describe the licensee's gender. The number of states with Gender X-related statutes continues to rise. As states start to incorporate Gender X into their statutes, insurance companies, DMVs and departments of insurance (DOIs) are being called upon to apply this new standard to existing frameworks. There are several ways a state may recognize Gender X, such as more formal documentation such as proof of surgery, court order, or amended birth certificate. In some states, an applicant may satisfy the requirement to select Gender X by providing a certification from a medical or mental health provider (although there is a lot of variance as to who in the medical community can provide this documentation). According to the American Association of Motor Vehicle Administrators (AAMVA) (2016), the modern trend is to allow an applicant to complete a more simplified self-attestation form vs. more formal medical documentation as it reduces liability associated with private medical information.

10. Mont. Code Ann. § 49-2-309 (1985).

IV. Regulatory Movement to Recognize Gender X in Personal Automobile Insurance

Massachusetts and Missouri were the first states to require drivers to have a license (Nix,2016). Gender (often listed as "sex") has been a required field since the beginning. In 2017, Washington, DC, became the first jurisdiction in the United States to enact legislation that allows for neutral gender selection on identification (Grinberg, 2017). By creating a third gender category, nonbinary persons are able to select the Gender X option vs. the traditional male and female only options. Oregon, California and Maine quickly followed suit with legislation and DMV action. Several states have proposed legislation, and others are discussing these changes through agency directives.

In Oregon, insurers are required to "allow the applicant to accurately indicate their official sex or gender designation on file with the DMV," thus requiring insurers to include a Gender X category.[11] Some states have been silent as to the requirements imposed on insurers to include Gender X on the application form. However, states have consistently demanded that any rate changes for nonbinary drivers follow the state's regulatory process and prohibition of unfair discrimination.

Oregon requires all insurers who use gender as a rating factor to file rates for the nonbinary class. There is some concern that new class rates will be arbitrary due to the potentially low number of individuals in the class (Taube, 2017). One potential recommendation is to use the female gender for rating purposes when the third gender is used, thus providing the nonbinary insured with a more favorable rate and avoiding unfair discrimination. This solution is not without implication. Companies, which use this method, could be exposing themselves to fraudulent gender identification by members of the male class seeking the nonbinary status as a way to circumvent higher premium charges. In 2018, a young male driver in Alberta, Canada, changed his gender identity from male to female in order to receive a reduced auto insurance rate (Meckbach, 2018). However, if it rises to the level of criminal misstatement on the application, some states that recognize nonbinary identities allow for criminal penalties for such infractions.

As of 2020, 19 states across the country recognize Gender X on driver's licenses. Several other states have made efforts to recognize Gender X, but they have encountered issues along the way. For example, the Indiana Bureau of Motor Vehicles (BMV) announced that it was adding a third gender option for those who could provide an updated birth certificate or a document from their physician. A House Committee worked to amend a different bill to add language to define gender as "male" or "female" to stop the BMV's third gender option. Ultimately, the Indiana attorney general cited that the Bureau did not have the authority to

11. OR Bulletin 2018-3 (2018).

create such an extension and adding that option would require new legislation by the General Assembly (WTHR, 2020). In his official opinion, the Attorney General stated that the BMV does not have the authority to change definitions of gender and sex as they are synonymous with the Indiana code. The BMV can issue licenses, but it cannot authorize birth certificate changes.[12]

Illinois, New York and New Jersey have also passed laws within the last year or so to allow for Gender X identification without a doctor's affidavit. However, Illinois' law is delayed due to Real ID contract issues. The federal REAL ID Act of 2005 was passed as an attempt to create a national standard identification. Until the passage of this act, this responsibility was primarily guided by state law informed by the Uniform Vehicle Code. State DMVs across the country are essentially the agency responsible for identification verification in the U.S. If someone wishes for their state ID to be accepted by the federal government, their state ID must meet the Real ID Act requirements. The REAL ID Act requires gender to be listed on licenses. However, the U.S. Department of Homeland Security (DHS) left determination of gender up to the states since states have different requirements to be recognized as another gender than the one assigned at birth (Minimum Standards for Driver's Licenses and Identification Cards Acceptable by Federal Agencies for Official Purposes, 2008).

A. Economic and Social Consequences of Gender X in Insurance

Although actuaries and rate-makers develop insurance rates from available data, the selection of the rating variables is not determined by actuaries alone. Society has influence in these decisions, particularly regarding the fairness of using a given variable for rating. What variable attributes influence society's assessment of whether it is fair for insurance purposes? Avraham (2018) and Prince and Schwarcz (2020) offer several key attributes that might be considered individually, and in combination, as to whether the variable: 1) statistically discriminates with respect to the risk at hand; 2) is causal with respect to the risk; 3) is controllable by the insured; 4) is mutable; 5) perpetuates the adverse effects of past discrimination; and 6) inhibits "socially desirable" behavior. If a prospective variable discriminates on the basis of the risk of loss, it is more likely fair than not fair, all else the same. This societal sense of fairness is strengthened by causality between the variable and the risk and/or controllability. For instance, since reckless driving is a choice and is a known cause of auto accidents and losses, a history of reckless driving is statistically discriminating and causal with respect to auto insurance claims, in addition to being controllable by the insured.

The last three attributes of a variable mentioned by Prince and Schwarcz (2020)—mutability, discrimination limiting/reversing, and behavior inhibiting—are further removed from a connection with the pure economics of fairness than the first three attributes, and closer to a connection with social considerations of fairness. A variable's mutability pertains to its changeability, especially over time.

12. IN. Att'y Gen. Op. No. 2020-3 (March 9, 2020).

If mutable, such as age, a variable may be viewed generally as socially fair in the sense that everyone gets his/her chance to be on the "winning" and the "losing" side of the variable during a lifetime. If a prospective rating variable perpetuates negative stereotypes about a group or may result in disparate outcomes by group, it is understandably considered by many in society to be socially disadvantageous for use even if the economic connections are statistically valid. Last, variables that if used may reduce "good" behaviors may be considered socially unfair to use. For example, Prince and Schwarcz (2020) cite U.S. laws that prohibit insurers from discriminating on the basis of intimate partner violence because such reporting could dissuade victims of violence from seeking needed medical care or police intervention.

Generally, there is movement in state insurance laws and regulatory implementation away from the use of gender as an underwriting and rating factor. In the long-term, economic implications of these changes may be zero sum in business lines where gender has been used as a proxy for risk characteristics that have been difficult or impossible for insurers to discern. If males and females historically used their driving time differently and/or engaged in different driving behaviors due to social or practical differences in their traditional gender roles, cultural and socioeconomic shifts toward less clear gender roles in society over time will result in a natural evolution away from use of gender as an insurance factor. In these cases, an evolution toward more granular and direct measurement of the underlying risk characteristics may in fact result in underwriting and rating improvements.

Consideration of the economics of unisex and Gender X legislation may be more important as a shorter-term consideration or present a long-term challenge only in lines where biological characteristics as a direct correlate to losses remain at issue, such as life, disability, and health insurance. We can return to our discussions of auto insurance and life insurance, previously used for illustration of the market problems, to consider the prospective economic and social implications of Gender X in insurance. In the discussions below, the first three rating variable attributes discussed above—statistical discrimination, causality, and control—are referred to as the economic attributes, while the latter three variable attributes—mutability, negative stereotype reinforcing, and good-behavior inhibiting—are referred to as social attributes.

B. Auto Insurance

In auto insurance, gender as a rating variable is mixed in the fairness of its economic attributes in that it statistically discriminates, yet it is neither causal with respect to the risk nor under the control of the insured. Even its ability to statistically discriminate between risk levels is likely due to its use as proxy for other, more salient variables. Auto insurance is a business line representing the use of gender (historically, an easily discernible variable that is actuarially appropriate) as a rating variable where the correlation between gender and losses is likely an inferior substitute for multiple other factors (historically, not easily

discernible and not actuarially linked to losses) (Werner and Modlin, 2016). Indeed, gender is not isolated in its use as a proxy for more granular, superior data. Driving record, for example, serves primarily as historic data to proxy for current and prospective driving behavior. The driving record is no perfect predictor of driving behavior (and at-fault accidents). Suppose an individual engages in safer driving habits in some part directly due to marks on the driving record. Or suppose an individual continues to engage in risky driving behavior (and risks at-fault accidents) due in part to having never been caught in traffic violations. It can then be asserted that the technological capability to observe actual driving behavior in real time, or in close proximity to real-time, at reasonable cost affords auto insurers the opportunity to improve their auto insurance rating plans, if allowed or required by law to do so.

With respect to its social attributes of fairness, gender as a rating variable may be mutable as it interacts with age, since younger males and older females generally pay more. Taken alone, however, gender is not changeable over time and is thus not socially fair from this standpoint. Historically, gender as a variable for pricing auto insurance has overall benefited females with lower rates than males, so it has served in the auto line to limit or offset the discrimination females are known to experience in the purchase of some other goods and services. As Gender X is introduced as a gender identity for auto insurance purposes, however, a more complex discrimination picture emerges. Trans* individuals share in common with females a history of unfavorable societal discrimination, and if not afforded the same rating as females, they could suffer the reinforcement of negative stereotypes about nontraditional gender identities. To the extent that such stereotypes result in a fear of self-identifying with gender, trans* individuals could be hesitant to purchase auto insurance in cases where there is no mandate to do so, and thus inhibit the purchase of a desirable social good.

We would not expect that the pricing and other economic implications that result from replacing gender with a superior rating variable would be shouldered disproportionately by a particular gender—male, female, or Gender X. If, however, gender is removed as a rating variable without replacement (via widespread introduction of unisex legislation) or is still used with the introduction of a self-reported, third gender identity (Gender X) option, market problems in auto insurance may be created, at least in the short term. Unisex legislation would result in cross-subsidization between and among genders in order to arrive at the "average" gender-neutral rate, presumably at a disproportionate cost to females, who when differentiated from males have historically paid less for auto insurance, all else the same. If instead gender remains a rating factor, and Gender X is allowed as a third gender option that is initially charged the female base rate, there would be an economic incentive for males to report as Gender X. If higher losses are experienced by Gender X risk pools than by female risk pools, eventually the Gender X base rate would necessarily rise commensurate with the implied risk differential. As such, any "gaming" advantage and potential for adverse selection effects in the self-report of gender would be temporary and enjoyed only for the

time required for the market pricing to "catch up" actuarially to the market loss information.

C. Life Insurance and Life Annuities

In life and longevity-sensitive retirement lines of business, gender is a fair rating variable based on the economic attributes of statistical discrimination and causality, while unfair based on the economic attribute of control. Life insurance and life annuity products are fair representatives of insurance lines that employ gender as a rating variable where the correlation between gender and losses is potentially both a direct measure of biological differences that correlate with losses, as well as a proxy for multiple other factors (such as behavioral risk differences that are not adequately captured by including occupation, hobbies, and other lifestyle choices as separate variables) (Black et al., 2015). The economic implications of including Gender X in these lines may follow the narrative asserted for auto insurance above. A noteworthy difference between these lines and auto insurance, however, is the offsetting rate effect between life insurance and annuities. While females may pay less for life insurance, they pay more for life annuities, all else equal. Thus, the question of unfair discrimination in these lines that could arise from the introduction of Gender X may be less pronounced than in auto insurance, at least if the question is addressed across products (rate equity taking both life insurance and life annuities into account) rather than within products (rate equity as measured within the life insurance and life annuity products separately).

With respect to its social fairness attributes, gender as a rating variable in longevity-based insurance has no merits. Lacking mutability, gender then is considered socially on the basis of its value to limit-reverse past discrimination and/or promote desirable behavior. There is no evidence that gender—especially with the introduction of Gender X—meets either of these fairness considerations.

Similar to the market challenges that could be created within auto insurance, the introduction of Gender X on a self-reporting basis could incentivize short-term gaming of life insurance and life annuity purchases. While an individual who purchases only life insurance or only a life annuity does have an economic incentive to consider pricing differences in reporting the insured's gender, an individual who purchases both products may have less or no incentive to do so. Despite individual gaming in the short term, the longer-term and arguably larger public policy challenge may be related to life insurance and annuity values and payouts based on gender-related income disparities (Black et al., 2015).

A special cautionary note on unisex rating: Movements by additional states toward unisex rating are not surprising, even in life insurance and annuities, if we consider the social attributes of fairness along with the economic attributes. One potential implication of such a policy strategy will be "cherry-picking" or "cream skimming" by insurers. If allowed by law, insurers for which use rating is viewed as restrictive may charge an "average" rate across genders as required, but still

utilize the gender characteristic to identify, attract, and select insureds that are considered lower risk from within the insurable population.

D. Opportunities to Create Trust With the LGBTQIA+ Community/Consumers

1. The Importance of Trust Within the Insurance Relationship

There are at least two factors that can endanger the trust between insurers and their insureds. One challenge is related to a lack of consumer awareness regarding the insurer's unique pricing situation (Werner & Modlin, 2016) and the other has to do with the loss of the "certainty effect" related to claims payments by insurers (Stewart & Stewart, 2001).

First, the insurance industry is arguably the only industry in which its players (insurers) must price their products prior to knowing the cost of goods sold. Almost all products and services entail known costs (e.g., raw supplies, labor), and prices are set competitively to cover these costs, with a margin added for profitability. In the insurance market, on the other hand, while portions of the insurer's costs are known at the time of sale (e.g., underwriting expenses and reinsurance premiums), the largest portion—losses (or claims) —is unknown. Thus, insurers set rates (and ultimately prices) based on the expected value of losses, adding loadings for expenses, profits, and contingencies (Werner & Modlin, 2016). Since consumers are unaccustomed to purchases where costs are unknown, it is easy to mistake insurance pricing as an arbitrary, or even malevolent, process.

Second, the speed and certainty with which insurers pay for losses (and claims) as promised in an insurance contract have both decreased over time, particularly in commercial property and liability insurance (Stewart & Stewart, 2001). Although this decline in policyholder certainty is not necessarily found in personal lines of insurance overall, the authors acknowledge that "... some companies have the reputation for paying fairly and some do not, their reputations based on people's collective experience with an extremely large number of claims." The certainty effect, a psychological effect believed by psychologists and economists to contribute favorably to the demand for insurance, may be eroded by this variability in outcomes and perceptions. The certainty effect is a psychological result from the reduction of probability from certain to probable, such that people overweight outcomes that are considered certain over outcomes that are possible yet uncertain (Tversky & Kahneman, 1986). The prospect of certainty provided by insurance traditionally has arguably been diminished, leaving insurance consumers less optimistic about the prospect of claims payments, even if in actuality the certainty and timing of claims payments have decreased for justifiable reasons. Loss of the certainty effect, when analyzed theoretically, has adverse economic implications for insurance markets. Generally, the theoretical consensus is that if insurance is seen by consumers as uncertain and/or unreliable, the result is a

discounting of the perceived value of insurance to the consumer (Stewart & Stewart, 2001).

2. The Problem of Trust Within Trans* Consumer Experience

Any concerns about consumer confidence in the insurance industry may be amplified when considering the experiences of trans* and nonbinary persons as financial consumers. While it is impossible to speculate specific trans* and nonbinary distrust in insurance per se, it is clear that trans* and nonbinary consumers face significant challenges from a variety of day-to-day interactions. From applying for driver's licenses to filling out federal financial forms for college assistance, trans* and nonbinary individuals find significant challenges and face the potential for harassment and even physical violence in completing the most basic of tasks (Nicolazzo, 2017, p. 34). To more fully illustrate this point, let us take a look at one of the most pressing barriers for trans* and nonbinary individuals, interactions with the health insurance industry around gender affirming care (Stroumsa et al., 2020, p. 528). Specific examples of these barriers are evidenced by high rates of homelessness, structural barriers to accessing gender affirming care, lack of access to gender confirmation and knowledgeable physicians, and blatant transphobia in many health care settings (Stroumsa et al., 2020, p. 528).

This is particularly relevant when many trans* and nonbinary individuals face barriers because they do not "pass" as the gender that they identify with (Antommaria, 2018, p. 22). The term "passing" refers to an individual's ability to fit the schema of a particular gender identity. An example would be a transmasculine identified individual who still looks and sounds feminine because of a lack of access to gender affirming hormones (Stroumsa et al., 2020, p. 529). Imagine the stress of using he/him/his pronouns, the prefix mister, and still not passing as masculine because other people schematize them as female. The open transphobia, distrust, and even pathologizing of the individuals makes interacting with professional services uncomfortable and even potentially dangerous. This becomes a vicious cycle where folks need gender affirming hormones to feel comfortable interacting with others, but as many as one-fourth of trans* and nonbinary individuals avoid seeking health care precisely because they fear mistreatment because of their gender presentation (Stroumsa et al., 2020, p. 529).

This problem is exacerbated by region: With nondiscrimination policies for private insurance and Medicaid lacking in the Midwest and southern states, many trans* and nonbinary individuals in these regions face a greater likelihood of having their claims denied (Bakko & Kattari, 2019, p. 1699; (Antommaria, 2018, p. 23). Taking into account other intersectional identities such as sexuality, race, and socioeconomic status, access to care for these twice marginalized positionalities confounds the problem even further (dickey et al., 2016, p. 226). With these structural barriers to even the most basic health care in mind, it is easy to see how trans* and nonbinary individuals may have a lack of confidence in the insurance industry more broadly than just in health insurance. And the issue may be greater than a lack of confidence; it may well constitute a significant distrust in

their own safety and sense of dignity when approaching insurance and other financial services providers. If a health care provider does not honor an individual's gender identity, why would one assume that an auto insurer would, unless explicit and advertised options existed with these identities in mind?

3. Self-Selection Option

Before considering three distinct trans* scenarios, it is critical to consider the size of the impacted population. First, it should be noted that there is fierce debate about trans* population (Nicolazzo, 2017, p. 21). There are a variety of relevant factors to consider in the count, including self-selection, transition, and definition. Some numbers have been posited, suggesting that somewhere between 0.3% to 2% of the population may identify as trans*, but these numbers have limitations (Nicolazzo, 2017, p. 22). It should also be noted that with any marginalized identity, "counting" is problematic due to the history of identity policing that has occurred in these communities (Nicolazzo, 2017, p. 22). Finally, while the term trans* is used as an inclusive term here, trans* should not be conflated with the term "transsexual," which implies gender confirmation surgery; therefore, the term trans* should be considered much larger and inclusive in scope (Nicolazzo, 2017, p. 23). Despite any ambiguity with regard to its size, the trans* population, by any count, is considerable and adequate to support the importance of the arguments in this paper on a pragmatic basis.

Three self-selection scenarios are provided below that invite the reader into an individual insured's trans* experience. Transmasculine, transfeminine and nonbinary individuals are each considered in turn. In each of the scenarios, it is worthwhile to consider the factors that lead insurers to charge male identified individuals more than female identified individuals. If it is accepted as given that men are more prone to accidents, one might want to ask why this is the case. There is a social lens that suggests that men and boys are constructed to be more prone to risk-taking behaviors as they are often less policed in their actions as children than girls and young women are. There is also a biological lens that suggests that there are chemical responses that might play into the decision-making process. Both of these lenses become salient based on identification, transition, and presentation.

Scenario 1: Transmasculine Insured (assigned at birth as female but identifies as trans-male on auto insurance application).

Transmasculine identified individuals have a distinct set of challenges in relation to identification, transition, and presentation. In terms of the social lens, a transmasculine individual may well have had the lived experience and socially constructed performance of "woman" for a significant portion of their life. That is to say, their lived understanding of the world has been formed by their performance of gender to date. When the individual first identified as trans*, when they began to present as masculine, and the extent to which they have access to hormone replacement therapy (HRT) and gender confirmation surgery (GCS), all affect this lived experience as trans* masculine.

Access to and utilization of both HRT and GCS both become salient when thinking from a biological lens. Recognizing first that the transmasculine individual may well already have primary and secondary sex characteristics that are traditionally classified as male is critical in ensuring that biology is not essentialized based on sex assigned at birth. From this point, understanding that access to gender affirming care is a barrier for many transmasculine individuals helps to contextualize that they might not have had access to testosterone, and it should not be assumed that there are chemical or hormonal influences at play that might influence the individual's driving habits.

Scenario 2: Transfeminine Insured (assigned at birth as male, but identifies as female on auto insurance application).

Transfeminine identified individuals also face a distinct yet different set of challenges in relation to identification, transition, and presentation. In terms of the social lens, a transfeminine individual may well have had the lived experience and socially constructed performance of "man" for a significant portion of their life. That is to say, their lived understanding of the world has been formed by their performance of gender to date, and their presentation may be influenced by a variety of factors, including access to gender affirming health care, safety, and their ability to pass. When the individual first identified as trans*, when they began to present as feminine, and the extent to which they have access to HRT and GCS all affect this lived experience as transfeminine.

Access to and utilization of both HRT and GCS both become salient when thinking from a biological lens. Recognizing first that the transfeminine individual may well already have primary and secondary sex characteristics that are traditionally classified as female is critical in ensuring that biology is not essentialized based on sex assigned at birth. From this point, understanding that access to gender affirming care is a barrier for many transfeminine individuals helps to understand that they might not have had access to estrogen, and it should not be assumed that there are chemical or hormonal influences at play that might influence the individual's driving habits. Additionally, issues related to passing, stealth, and presentation are often more complex with transfeminine individuals.

Transfeminine individuals often face the greatest risks of physical danger of any members of the LGBTQIA+ community, often perpetuated by cisgender straight men. Recognizing that transfeminine individuals might vary in their presentation is critical: They might present as men for their own safety, or might present convincingly as women, and care should be made not to make assumptions or ask inappropriate questions related to identity or whether or not the individual has undergone gender confirmation surgeries.

Scenario 3: Nonbinary Insured (regardless of sex assigned at birth, identifies as nonbinary or genderqueer on auto insurance application).

This third scenario is somewhat more complex as sex assigned at birth, identification, and expression might vary significantly with individuals who identify as nonbinary. In terms of sex assigned at birth, a nonbinary individual might have been assigned male or female, but it is essential to recognize that this does not mean that this individual has exclusively male or exclusively female primary and secondary sex characteristics, as it is possible that these individuals are intersex. From the biological lens, this matters because it should not be assumed that these individuals have biological factors related to sex identification that would influence their driving habits one way or the other.

In terms of identification, or gender identity, this individual might have the lived experience of presenting either as masculine or feminine, or a mixture of both, and it should not be assumed that there are social factors that influence driving habits on the basis of sex or gender identity. An individual might have been assigned male at birth, and presented masculine for a period of time, presented feminine for a period of time, or presented in an androgynous fashion. Alternatively, an individual might have been assigned female at birth, and presented feminine for a period of time, presented masculine for a period of time and, or presented in an androgynous fashion.

It is for these reasons that gender expression should be seen as distinct from gender identity. A nonbinary individual may present as masculine, feminine, or a mixture, but this presentation is distinct from identity. Even if a nonbinary individual is assigned female at birth and undergoes HRT or GCS to present masculine, this does not make them a trans man; rather they are a masculine presenting nonbinary individual. Because of the complexities of these aspects of sex and gender identity and expression, it is critical that the insurer not make assumptions about either social or biological factors in relation to driving habits.

E. Regulatory Hurdles/Issues

The recognition of nonbinary persons brings a host of regulatory issues. At the most basic level is whose role it is to define gender and implement changes at the state level and at what point that responsibility transfers to the agencies such as the DMV or DOI. Many of the earlier laws providing for Gender X on state licenses failed to guide insurance companies on pricing, which left insurance regulators and companies scrambling to figure out the best model to move forward. The sudden demand for interpretation is reminiscent of the notorious "House Bill 2" in North Carolina, which roused equal rights activists and posed severe challenges resulting in significant economic loss based on how different entities responded.[13]

13. The Public Facilities Privacy & Security Act, also known as House Bill 2, was a 2016 North Carolina Statute that compelled schools and public facilities offering single gendered bathrooms to only allow people to use those bathrooms associated with the "sex" listed on their birth certificate. The statute was later repealed. The statute was partially repealed in 2017, and the remaining sections were repealed in 2020.

It is relatively easy for a state to add Gender X for state licenses as it is mostly dependent on software updates and staff training. The California DMV estimated a one-time cost of $880,000 and ongoing costs of $45,000 a year to offer nonbinary licenses (Norwood, 2019). Some states believe they will be able to absorb costs into other update projects, while others like Indiana struggle with how to navigate these changes timely when they are in the middle of service contracts.

One opponent of California's legislation suggested that the Gender X option did not provide biological accuracy, which could pose a challenge in the event of a medical emergency when the person is unconscious (Norwood, 2019). Arguably, Gender X provides more accurate information in the event of a medical emergency as it gives medical and hospital personnel information regarding how the person wishes to be identified and treated in the hospital particularly around more traditionally gendered decisions such as room sharing.

The AAMVA discusses best practices for implementing Gender X options (AAMVA, 2016). It recommends an easy-to-understand form for applicants to submit for a change, including an attestation of gender identity to be signed by a variety of licensed providers. It also recommends removing the requirement for documented surgery/procedure, court order, and amended birth certificate. Finally, the AAMVA recommends sensitivity training and guidance for agency personnel on protecting private information.

F. Recommendations to Ameliorate Unfair Discrimination and Enhance Trust

This paper focuses on an issue of "fairness" and unfair discrimination within insurance, and most particularly within auto insurance. We assert that the use of gender in setting rates represents a form of unfair discrimination, and here we suggest recommendations to ameliorate the problem.

1. Long-Term Option: Elimination of the Gender Rating Variable, or Unisex Rating

The ideal solution is to eliminate gender as a rating factor, and use actual loss exposure and driving behavior for rating and underwriting. Telematics are capable of gathering and transmitting driving information in real time to information centers, and can benefit insurers and insured drivers. Gender has been included in auto insurance rating as a proxy variable for driving behavior to explain historically observed differences in accident rates and severities between males and females (Werner & Modlin, 2016). Although the DMV driving record has historically been used as a more direct representative variable for driving behavior, it is an imperfect measure at best; it serves only as a measure of poor or unacceptable driving behaviors, and even then, it only captures this data in cases where a driver is formally cited by law enforcement for traffic violations.

Usage-based insurance (UBI) is gaining popularity, and many auto insurers are beginning to offer it as an option to customers. UBI telematics can help

insurers more accurately estimate accident damages and reduce fraud by enabling them to directly measure driving habits continually, as well as analyze accident data. Abruptness and frequency of braking, speed of acceleration, number of miles driven, and the time(s) of day driven are important examples of UBI data for which the technology exists to capture variables that are relevant to establish accident exposure, driving behavior, and vehicle performance at the point of insurance underwriting and/or claim. Aside from its behavioral pricing and loss control benefits, the advent of telematics technologies simultaneously serves another benefit to the insurance marketplace. UBI programs also make possible the underwriting of auto insurance on the basis of actual (rather than average, or expected) exposure, charging insured drivers premium only for the miles driven in a specified period. Changes in consumer demand for auto insurance that are aligned with changes in the demand for autos are important to the future of the auto insurance industry.

Privacy concerns – Voluntary UBI programs already exist and have met with resistance in some states due to privacy concerns. The exposure and behavior tracking systems do reveal powerful information that, once known (and especially if publicly available), could be used or even misused for other than just fair discrimination in insurance. In response, some states have authorized legislation that requires disclosure of tracking practices and devices. Additionally, some insurers choose to collect only limited data. Social acceptance of this sort of open information and sharing is increasing as more technology devices (e.g., smartphones, tablets, and GPS devices) and social media networks (e.g., Facebook, Instagram, and Twitter) become the norm and as today's teenage and young adult population, who are less privacy-oriented than their elders (Regan et al., 2013; Jiang et al., 2016), make up an increasing portion of the driving population.

Legislative and regulatory challenges – This recommendation would require state legislation in many states to allow insurers to: 1) require insured drivers to participate in UBI programs; and 2) collect, transmit, and use driving data to develop upward as well as downward rating adjustments rather than just to produce premium discounts.[14] Telematics has not yet been introduced as a requirement in the personal lines. Indeed, as of the time of this writing, there is no model law as yet that speaks to the use of telematics in underwriting and pricing for purposes of fair discrimination in personal auto insurance. Neither has any state created legislation to this end so far.

States that require insurers to obtain approval for the use of new rating plans, such as those with prior-approval, file-and-use, or even use-and-file laws may impede UBI plans, intentionally or inadvertently. Rate filings usually must include

14. Telematics or usage-based insurance is not without its own challenges in regulating privacy issues, interaction between telematics, existing anti-rebating laws, and profitability given the costliness of implementation (NAIC, 2021).

statistical data that supports the proposed new rating structure. An insurer who does not have past UBI experience may find it difficult to get rating filings approved, lacking historic data to establish UBI rating variables as fair for rating purposes. Other requirements could create roadblocks for UBI programs as well (e.g., the necessity of continuous insurance coverage, upfront statement of premium charge, set expiration date, and guaranteed renewability). Additionally, while no state law specifically governs telematics, some privacy laws may apply, as described previously in this section.

Cost and competitive concerns – UBI programs depend on what is today expensive technology to track and refine driving data. Developing and implementing a UBI program can be costly and resource-intensive to insurers, especially given that UBI remains an emerging area with uncertainty surrounding how and to what extent tracked data should be integrated into existing or new rating plans. Plus, already-tight profit margins may be tightened further by insured drivers opting voluntarily into UBI ratings for reduced premium charges.

Despite the cost disincentives, the competitive landscape for auto insurance has begun to demand that insurers drift (at a minimum) to UBI capabilities. Estimated at $19.6 billion in 2021, the UBI market size is projected to reach $66.8 billion by 2026, growing at a compound annual growth rate of 27.7% during the five-year forecasted period.[15] Lower insurance premiums compared to traditional insurance, increasing adoption of connected car services, and growing on-road autonomous capabilities of vehicles can be expected to drive the demand for the UBI market. The longer game for insurers who desire to fight to stay in the auto (and particularly auto liability) insurance business is to solve the problem of original equipment manufacturers and InsurTech firms that are positioning to own the data and want to compete to insure/warranty self-driving vehicles and their performance.[16]

2. Short-Term Option: Inclusion of a Third Gender Category in Rating

As discussed in earlier sections, several states now allow for a driver to select a third gender identity, Gender X. Commensurate with this inclusive move, states can also require insurers to recognize Gender X as a separate and distinct category for the gender rating variable. While this solution could serve as a stop-gap measure until such time as telematics and UPI are fully implemented for auto insurance pricing and underwriting purposes, it does pose its own problems. The primary issue is the lack of existing accident data attributable to Gender X. Arguably, by such time as states and insurers develop adequate data to accurately

15. See the market forecast at https://www.marketsandmarkets.com/Market-Reports/usage-based-insurance-market-154621760.html and a recent 2020 J.D. Power consumer survey having results that are consistent with this forecast at *https://www.jdpower.com/business/resources/insurance-during-covid-19-consumer-attitudes-and-perceptions.*

16. See e.g. KPMG, *The Chaotic Middle: The Autonomous Vehicle and Disruption in Automobile Insurance,* last updated June 2017, *https://assets.kpmg/content/dam/kpmg/us/pdf/2017/06/chaotic-middle-autonomous-vehicle-paper.pdf* (a white paper).

use Gender X as a third category of the gender rating variable, the legislation to authorize the use of telematics for rating and underwriting may well be achieved.

Short of charging Gender X its own separate and distinct rate, auto insurers may be under pressure to find ways to favorably rate insured drivers within the trans* community. This might be accomplished either by charging the lower of the existing binary gender-based rating values to those in the trans* community, or by using a blended approach where trans* insureds are charged the average of the rates charged to males and females. This stop-gap solution is limited only by the willingness of those in the trans* communities to self-identify. This approach nevertheless may create similar problems for other insureds to those that it temporarily solves for the trans* community since favorably rating for one group may result in arguments of unfair discrimination by other groups. Favorable treatment of those in the trans* community could spark controversy among insureds regarding whether such treatment discriminates on the basis of the risk of loss.

G. Conclusions and Implications

This article contributes to the body of literature on gender and insurance pricing/underwriting. In recent years, the insurance industry has started to engage in active discussion regarding historically marginalized groups, such as the LGBTQ+ community, both as an employer and as a supplier. Gender X options on driver's licenses create an opportunity for these diversity and inclusion efforts to have meaningful impact, create a pathway for systemic change, and simultaneously build trust between insurers and the LGBTQ+ community.

Gender identity: 1) is outside the control of the insured; 2) is immutable; 3) is not shown to be risk causal; 4) perpetuates negative stereotypes; and 5) potentially inhibits socially valuable behavior (and may even inhibit the purchase of insurance), all of which are attributes that imply the rating variable may be unfair for use in pricing insurance (Avraham, 2018; Prince & Schwarcz, 2020). Thus, despite the statistical discrimination that the use of the male-female dichotomy of gender-based rating may achieve, this form of actuarial discrimination is undesirable overall, based on evaluation of the other economic and social considerations.

Insurance suppliers and regulators can choose to proactively build trust with their communities, thereby improving consumer relations by working to remedy the effects of past discrimination experienced by trans* individuals. This can be accomplished in straightforward ways, via advantageous pricing and underwriting. With the evolution of the insurance industry toward predictive analytics, gender-based pricing may be moot in the near future. Rather than continue to use an antiquated rating variable, it is timely for the insurance industry and insurance regulators to capitalize on the opportunity now for positive societal impact in pricing modernization. Indeed, in auto insurance, the argument for modernization is strongest as: 1) the gender rating variable likely only proxies for driving behavior that would be better explained by more granular information (e.g.,

specific driving behaviors); and 2) increasingly self-driving vehicles de-personalize the underlying risks associated with insuring vehicles and transportation.

The willingness of trans* community members to be honest with auto insurers is yet unknown, but efforts made by insurers to ensure the fairness of pricing discrimination will serve only to enhance trust with the trans* community, and thereby increase the likelihood that trans* insured drivers will: 1) be open with insurers in the underwriting process; and 2) purchase non-compulsory coverages, all else the same. A secondary question is whether changes to the auto insurance rating plans be compulsory or market-driven. Auto insurers have a competitive incentive to move to telematics usage and to rating plans that are based on actual driving exposure and behavior for pricing accuracy (i.e., fair discrimination). Given that the regulatory and operational impediments to full telematics usage can take time to overcome, it may be advantageous to take stop-gap measures compulsory and allow the market to migrate to telematics.

The insurance market's unwritten social compact with the public—one premised on protection—is strengthened by more inclusive insurance pricing (and underwriting) policies. There exists a largely untapped market for insurance in the trans* and trans*-allied communities, with a population of millions in the U.S. alone. Optimization of trust and the certainty effect within these groups can contribute to increased insurance demand by insurable individuals across multiple lines of business, producing both socially and economically desirable outcomes. Notwithstanding short-term market problems and frictions that may occur, the economics of introducing Gender X (and ultimately, eliminating gender from pricing altogether) make good business and regulatory sense.

References

American Association of Motor Vehicle Administrators (AAMVA). (2016). *Resource guide on gender designation on driver's license and identification cards*. *https://www.aamva.org/GenderDesignationOnDLID_Sept2016/.*

Akerlof, G. A. (1970). The market for 'lemons': Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*. The MIT Press, *84*(3), 488–500.

American Automobile Association Foundation for Traffic Safety. (2017). *2016 traffic safety culture index* (Technical Report). Washington, DC.

Antommaria, A. (2018). Accepting things at face value: Insurance coverage for transgender health care. *The American Journal of Bioethics, 18*(12), 21-23.

Avraham, R. (2018). Discrimination and insurance. In *The Routledge Handbook of The Ethics of Discrimination*, K. Lippert-Rasmussen, ed., Routledge.

Baker, T. (2002). Risk, insurance, and the social construction of responsibility. In *Embracing Risk: The Changing Culture of Insurance and Responsibility*, 33–51.

Bakko, M., & Kattari, S. (2020). Transgender-related insurance denials as barriers to transgender healthcare: Differences in experience by insurance type. *Journal of General Internal Medicine, 35*(6), 1693–-1699.

Berila, B. (2016). Mindfulness as a healing, liberatory practice in queer anti-oppression pedagogy. *Social Alternatives, 35*(3), 5–-10.

Black, K. Jr., Skipper, H., & Black, K. III. (2015). *Life Insurance, 15th Edition*. Lucretian.

Blackburn M. V. (2014). (Re)writing one's self as an activist across schools and sexual and gender identities: An investigation of the limits of LGBT-inclusive and queering discourses. *Journal of Language & Literacy Education*, *10*(1), 113.

Butler, J. (1988). Performative acts and gender constitution: An essay in phenomenology and feminist theory. *Theatre Journal, 40*(4), 519–531.

Butler, J. (1993). *Bodies that matter: On the discursive limits of sex*. New York: Routledge.

Cardon, J. H., & Hendel, I. (2001). Asymmetric information in health insurance: evidence from the National Medical Expenditure Survey. *RAND Journal of Economics, 32*(3), 408–427.

Casualty Actuarial Society. (2003). *Statement of principles regarding property and casualty insurance ratemaking*, as adopted May 1988, Casualty Actuarial Society Yearbook 2003.

Cawley, J., & Philipson, T. (1999). An empirical examination of barriers to trade in insurance. *American Economic Review*, *89*(4), 827–846.

Chiappori, P. A., & Salanie, B. (2000). Testing for asymmetric information in insurance markets. *Journal of Political Economy, 108*(1), 56–78.

Creighton, S.M., et al. (2009). Intersex practice, theory, and activism: A roundtable discussion. *GLQ: A Journal of Lesbian and Gay Studies, 15*(2), 249–260.

Cutler, D. M., & Zeckhauser, R. (1998). Adverse selection in health insurance. *Forum for Health Economics & Policy*, 1: Article 2.

Dionne, G., Gouriéroux, C., & Vanasse, C. (2001). Testing for evidence of adverse selection in the automobile insurance market: A comment. *Journal of Political Economy*, *109*(2), 444–453.

European Union. (2012). Guidelines on the application of council directive 2004/113/ec to insurance, in the light of the judgment of the court of justice of the European Union in case c-236/09 (test-achats). *Official Journal of the European Union*, Publications Office of the European Union.

Fausto-Sterling, A. (2000). *Sexing the body: Gender politics and the construction of sexuality*. Basic Books.

Finkelstein, A., & Poterba, J. (2004). Adverse selection in insurance markets: Policyholder evidence from the UK annuity market. *Journal of Political Economy*, *112*(1), 183–208.

Finkelstein, A., & McGarry, K. (2006). Multiple dimensions of private information: Evidence from the long-term care insurance market. *American Economic Review*, *96*(4), 938–958.

Francis, B. (2010). Re/theorising gender: Female masculinity and male femininity in the classroom? *Gender and Education*, *22*(5), 477–490.

Gorzelany, J. (2017). Mythbusting: Why are women paying more than men for car insurance? *Forbes. https://www.forbes.com/sites/jimgorzelany/2017/10/12/mythbusting-why-are-women-paying-more-than-men-for-car-insurance/?sh=5d319ba15e00.*

Grinberg, E. (2017) You can now get a gender-neutral license in D.C. CNN. *https://www.cnn.com/2017/06/27/health/washington-gender-neutral-drivers-license/index.html*.

Insurance Institute for Highway Safety. (2020). [Unpublished analysis of April 1, 2016 - March 31, 2017 data from the U.S. Department of Transportation's Fatality Analysis Reporting System and the National Household Travel Survey]. Arlington, VA.

IN. Att'y Gen. Op. No. 2020-3 (2020, March 9).

Irving, D. (2013). Normalized transgressions: Legitimizing the transsexual body as productive. In S. Stryker & S. Aizura, (Eds.), *The Transgender Studies Reader* (pp. 15-29). Taylor and Francis Publishing.

Jiang, M., Tsai, H.S., Cotten, S., Rifon, N., LaRose, R., & Alhabash, S. (2016). Generational differences in online safety perceptions, knowledge, and practices, *Educational Gerontology*, *42*(9), 621–634.

Jourian, T. (2015). Evolving Nature of Sexual Orientation and Gender Identity. *New Directions for Student Services*, *152*(Winter), 11–23.

Lemaire, J. (2002). Why do females live longer than males? *North American Actuarial Journal*, *6*(4), 21–37.

Li, G., Baker, S.P., Langlois, J.A., & Kelen, G.D. (1998). Are female drivers safer? An application of the decomposition method. *Epidemiology, 9*, 379–84.

Lord, D., & Mannering, F. (2010). The statistical analysis of crash-frequency data: A review and assessment of methodological alternatives. *Transportation Research Part A: Policy and Practice*. *44*(5), 291–305.

Mannering, F. (1993). Male/female driver characteristics and accident risk: Some new evidence. *Accident Analysis & Prevention*, *25*(1), 77–84.

Meckbach, G. (2018). The danger of lying about gender for cheaper auto insurance. *https://www.canadianunderwriter.ca/insurance/men-pretend-women-get-break-auto-insurance-1004135174/.*

Minimum Standards for Driver's Licenses and Identification Cards Acceptable by Federal Agencies for Official Purposes; DHS Final Notice, 73 Fed. Reg. 5271-5340 (January 29, 2008) (to be codified at 6 CFR Part 37).

National Association of Insurance Commissioners (NAIC). (2021). Telematics/usage based insurance. *https://content.naic.org/cipr_topics/topic_telematicsusagebased_insurance.htm.*

National Association of Insurance Commissioners. (2020). *2016/2017 Auto Insurance Database*, pp. 33.

Nicolazzo, Z. (2017). *Transgender students' strategies for navigating campus life and the institutional politics of inclusion*. Stylus Publishing, LLC.

Nix, E. (2016). When was the first U.S. driver's license issued? *https://www.history.com/news/when-was-the-first-u-s-drivers-license-issue.*

Norwood, C. (2019). How governments are transitioning their gender policies to nonbinary. *https://www.governing.com/archive/gov-nonbinary-lgbtq-legislation-regulations.html.*

OR Bulletin 2018-3. (2018).

Pauly, M., Withers, K., Subramanian-Viswana, K., Lemaire, J., & Hershey, J. (2003, August). Price elasticity of demand for term life insurance and adverse selection. National Bureau of Economic Research, Working Paper 9925.

Povich, E.S. (2019). What? Women pay more than men for auto insurance? Yup. *Insurance Journal*. *https://www.insurancejournal.com/news/national/2019/02/12/517466.htm.*

Prince, A., & Schwarcz, D. (2020). Proxy discrimination in the age of artificial intelligence and big data. *Iowa Law Review.*

Regan, P., FitzGerald, G., & Balint, P. (2013). Generational views of information privacy? *Innovation: The European Journal of Social Science Research*, *26*:(1–2), 81–99.

Rejda, G., McNamara, M., & Rabel, W. (2020). *Principles of Risk Management and Insurance, 14th Edition*. Pearson: Upper Saddle River, NJ.

Schlesinger H. (2000). The theory of insurance demand. In: Dionne G. (eds) *Handbook of Insurance*. Huebner International Series on Risk, Insurance, and Economic Security, Vol. 22. Springer, Dordrecht.

Schmeiser, H., Störmer, T. and Wagner, J. (2014). Unisex insurance pricing: Consumers' perception and market implications. *The Geneva Papers on Risk and Insurance*, *39*, 322–350.

Stewart, R., & Stewart, B. (2001). The loss of the certainty effect. *Risk Management and Insurance Review*, *4*, 29–49.

Stroumsa, D., et al. (2020). Insurance coverage and use of hormones among transgender respondents to a national survey. *Annals of Family Medicine*, *18*(6), 528–534.

Swedler, D. I., Bowman, S. M., & Baker, S. P. (2012). Gender and age differences among teen drivers in fatal crashes. *Annals of advances in automotive medicine. Association for the Advancement of Automotive Medicine. Annual Scientific Conference*, *56*, 97–106.

Taube, David. Auto Insurance Companies Say It's Unclear Whether New Gender Law Will Affect Rates, WLKY. *http://www.wlky.com/article/auto-insurance-companies-say-its-unclear-whether-new-gender-law-will-affect-rates/13129161*.

Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *The Journal of Business*. *59*(S4): S251.

Werner, G., & Modlin, C. (2016, May). *Basic Ratemaking, 5th Edition*. Casualty Actuarial Society.

West, K. (2013). Gender in automobile insurance underwriting: Some insureds are more equal than others. *Alberta Law Review*, *3*, 679.

WTHR staff. (2020). Curtis Hill: BMV doesn't have authority to allow nonbinary gender on licenses. *https://www.wthr.com/article/news/local/indiana/curtis-hill-bmv-doesnt-have-authority-allow-nonbinary-gender-licenses/531-a5cb3c6b-b549-479b-9874-370e80e69d9a.*

Journal of Insurance Regulation

Guidelines for Authors

Submissions should relate to the regulation of insurance. They may include empirical work, theory, and institutional or policy analysis. We seek papers that advance research or analytical techniques, particularly papers that make new research more understandable to regulators.

Submissions must be original work and not being considered for publication elsewhere; papers from presentations should note the meeting. Discussion, opinions, and controversial matters are welcome, provided the paper clearly documents the sources of information and distinguishes opinions or judgment from empirical or factual information. The paper should recognize contrary views, rebuttals, and opposing positions.

References to published literature should be inserted into the text using the "author, date" format. Examples are: (1) "Manders et al. (1994) have shown. . ." and (2) "Interstate compacts have been researched extensively (Manders et al., 1994)." Cited literature should be shown in a "References" section, containing an alphabetical list of authors as shown below.

Cummins, J. David and Richard A. Derrig, eds., 1989. *Financial Models of Insurance Solvency*, Norwell, Mass.: Kluwer Academic Publishers.

Manders, John M., Therese M. Vaughan and Robert H. Myers, Jr., 1994. "Insurance Regulation in the Public Interest: Where Do We Go from Here?" *Journal of Insurance Regulation*, 12: 285.

National Association of Insurance Commissioners, 1992. *An Update of the NAIC Solvency Agenda*, Jan. 7, Kansas City, Mo.: NAIC.

"Spreading Disaster Risk," 1994. *Business Insurance,* Feb. 28, p. 1.

Footnotes should be used to supply useful background or technical information that might distract or disinterest the general readership of insurance professionals. Footnotes should not simply cite published literature — use instead the "author, date" format above.

Tables and charts should be used only if needed to *directly support* the thesis of the paper. They should have descriptive titles and helpful explanatory notes included at the foot of the exhibit.

Papers, including exhibits and appendices, should be limited to 45 double-spaced pages. Manuscripts are sent to reviewers anonymously; author(s) and affiliation(s) should appear only on a separate title page. The first page should include an abstract of no more than 200 words. Manuscripts should be sent by email in a Microsoft Word file to:

Cassandra Cole and Kathleen McCullough
jireditor@gmail.com

The first named author will receive acknowledgement of receipt and the editor's decision on whether the document will be accepted for further review. If declined for review, the manuscript will be destroyed. For reviewed manuscripts, the process will generally be completed and the first named author notified in eight to 10 weeks of receipt.

Published papers will become the copyrighted property of the *Journal of Insurance Regulation*. It is the author's responsibility to secure permission to reprint copyrighted material contained in the manuscript and make the proper acknowledgement.

NAIC publications are subject to copyright protection. If you would like to reprint an NAIC publication, please submit a request for permission via the NAIC Web site at www.naic.org. (Click on the "Copyright & Reprint Info" link at the bottom of the home page.) The NAIC will review your request.